Certificate in Medical Journalism

Medical Writing and Editing

Abstract – A concise summary of a research article that highlights the purpose, methods, key results, and conclusions.
Related terms: summary, synopsis.
Explanation: The abstract allows readers to quickly assess the relevance of a paper. It is typically limited to 150–250 words and must be self-contained, meaning it should not contain citations or undefined abbreviations.
Example: "This study evaluates the efficacy of drug X in reducing blood pressure in hypertensive patients."
Practical application: Used in journal submissions, conference proceedings, and database indexing.
Challenges: Balancing brevity with completeness; avoiding jargon while maintaining scientific accuracy.

Adverse Event (AE) – Any undesirable medical occurrence in a patient administered a pharmaceutical product, regardless of causality.
Related terms: side effect, safety signal.
Explanation: AEs are reported in clinical trial manuscripts and post-marketing surveillance. They are classified by severity (mild, moderate, severe) and seriousness (non-serious, serious).
Example: "Two participants experienced mild nausea, classified as non-serious AEs."
Practical application: Accurate AE reporting is essential for regulatory compliance and risk-benefit assessment.
Challenges: Standardizing terminology (e.g., MedDRA coding) and ensuring consistent reporting across studies.

APA Style – The citation and formatting guidelines of the American Psychological Association, widely used in health-science writing.
Related terms: reference style, citation format.
Explanation: APA dictates author-date in-text citations, a reference list with hanging indents, and specific rules for tables, figures, and headings.
Example: (Smith & Jones, 2022) for an in-text citation.
Practical application: Required by many journals for manuscript preparation.
Challenges: Keeping up with annual updates and applying rules to complex sources such as clinical trial registries.

Authorship – The designation of individuals who have made substantial contributions to a manuscript.
Related terms: contributorship, ghostwriting.
Explanation: International Committee of Medical Journal Editors (ICMJE) criteria define authorship: (1) conception or design, (2) data acquisition or analysis, (3) drafting or revising, and (4) final approval. All four must be met.
Example: A statistician who performs analysis and writes the results section qualifies as an author.
Practical application: Determining author order and acknowledging contributions in the manuscript.

Challenges: Resolving disputes, preventing honorary or ghost authorship, and documenting contributions.

Bias – Systematic error that skews study results or interpretation away from the truth.
Related terms: confounding, selection bias, reporting bias.
Explanation: Bias can arise at any stage, from study design to manuscript preparation. Recognizing and mitigating bias is crucial for scientific integrity.
Example: Publication bias occurs when studies with positive outcomes are more likely to be published.
Practical application: Disclosure statements and transparent methodology sections help readers assess bias.
Challenges: Identifying subtle biases, such as language bias, and describing them concisely in the discussion.

Case Report – A detailed narrative describing the clinical presentation, diagnosis, treatment, and follow-up of an individual patient.
Related terms: case series, clinical vignette.
Explanation: Case reports highlight rare diseases, novel therapies, or unexpected drug reactions. They do not provide statistical inference but can generate hypotheses.
Example: Reporting a patient who developed Stevens-Johnson syndrome after a new antiviral.
Practical application: Often submitted to specialty journals; may be used for educational purposes.
Challenges: Maintaining patient confidentiality, obtaining consent, and avoiding overgeneralization.

Clinical Trial Registry – A publicly accessible database where investigators register study protocols before enrolling participants.
Related terms: ISRCTN, ClinicalTrials.gov.
Explanation: Registration promotes transparency, reduces duplication, and facilitates systematic reviews. Registries require key protocol elements such as objectives, design, eligibility criteria, and primary outcomes.
Example: A Phase III oncology trial registered on ClinicalTrials.gov with identifier NCT01234567.
Practical application: Journals often require a registry number during manuscript submission.
Challenges: Keeping registry updates synchronized with manuscript revisions and ensuring accurate outcome reporting.

CONSORT Statement – Consolidated Standards of Reporting Trials; a set of evidence-based recommendations for reporting randomized controlled trials (RCTs).
Related terms: STROBE, PRISMA.
Explanation: CONSORT includes a 25-item checklist and a flow diagram illustrating participant progress through the trial. It enhances reproducibility and critical appraisal.
Example: The flow diagram shows numbers screened, randomized, lost to follow-up, and analyzed.
Practical application: Authors use the checklist to verify completeness before submission.
Challenges: Adapting CONSORT for cluster or pragmatic trials and ensuring journal editors enforce compliance.

Copyright – Legal protection granting the creator exclusive rights to reproduce, distribute, and adapt a work.
Related terms: plagiarism, fair use.

Explanation: In medical writing, authors must secure permission for copyrighted figures, tables, or text excerpts. Proper attribution avoids infringement.
Example: Using a copyrighted image under a Creative Commons license with appropriate credit.
Practical application: Includes obtaining written consent from copyright holders and documenting it in the manuscript.
Challenges: Navigating differing publisher policies and managing open-access mandates.

Data Availability Statement – A brief declaration indicating where the underlying data supporting the manuscript can be accessed.
Related terms: open data, repository.
Explanation: Transparency initiatives encourage authors to deposit datasets in recognized repositories (e.g., Dryad, Figshare). The statement includes accession numbers or DOIs.
Example: "All de-identified participant data are available at https://doi.org/10.1234/abcd."
Practical application: Required by many journals to facilitate reproducibility.
Challenges: Protecting patient privacy, complying with institutional policies, and managing large datasets.

DOI (Digital Object Identifier) – A permanent alphanumeric string assigned to a digital object, such as a journal article, to provide a persistent link.
Related terms: URL, identifier.
Explanation: DOIs resolve to the current location of the content, ensuring stable citation. They are typically displayed as https://doi.org/xxxxx.
Example: The article's DOI is https://doi.org/10.1001/jama.2023.12345.
Practical application: Used in reference lists and citation managers.
Challenges: Updating references when articles are retracted or corrected.

Double-Blind Review – A peer-review process in which both the authors' and reviewers' identities are concealed.
Related terms: single-blind, open review.
Explanation: This method aims to reduce bias linked to author reputation, affiliation, or gender. It is common in high-impact journals.
Example: Reviewers receive a manuscript labeled only with an anonymous code.
Practical application: Authors may be asked to remove identifying information from the manuscript.
Challenges: Ensuring truly anonymous submissions, especially when preprints are publicly available.

Editorial Board – A group of experts responsible for overseeing a journal's scientific quality, policy, and direction.
Related terms: editor-in-chief, associate editor.
Explanation: Board members evaluate manuscripts, set editorial standards, and may solicit special issues. Their expertise spans the journal's scope.
Example: A cardiology journal's editorial board includes clinicians, statisticians, and ethicists.
Practical application: Authors may suggest potential reviewers from the board during submission.
Challenges: Maintaining diversity, managing conflicts of interest, and ensuring timely decisions.

Ethical Approval – Formal permission from an institutional review board (IRB) or ethics committee to

conduct research involving human participants.
Related terms: IRB, consent, protocol.
Explanation: Approval confirms that the study meets ethical standards for participant safety, confidentiality, and informed consent. Documentation must be cited in the manuscript.
Example: “The study protocol was approved by the XYZ Institutional Review Board (approval number 2022-001).”
Practical application: Required for clinical trials, observational studies, and case reports involving identifiable patients.
Challenges: Navigating multi-site approvals and reporting amendments.

FAIR Principles – Guidelines for data management that ensure data are Findable, Accessible, Interoperable, and Reusable.
Related terms: metadata, stewardship.
Explanation: Applying FAIR improves the utility of research data for secondary analysis and meta-research. It involves using standardized vocabularies and persistent identifiers.
Example: Depositing a dataset with rich metadata in a repository that assigns a DOI.
Practical application: Funders increasingly mandate compliance with FAIR.
Challenges: Balancing FAIR with privacy regulations and resource constraints.

Figure Legend – A concise description placed below a figure, explaining its content, symbols, and any abbreviations used.
Related terms: caption, illustration.
Explanation: The legend should be self-explanatory, allowing the figure to be understood without referring back to the main text. It includes sample sizes, statistical tests, and significance levels.
Example: “Figure 1. Kaplan-Meier survival curves for treatment A (solid line) and treatment B (dashed line). *p* Gantt Chart – A visual timeline used in project management to illustrate task schedules and dependencies.
Related terms: timeline, milestone.
Explanation: In medical writing projects, Gantt charts help coordinate literature review, drafting, editing, and submission phases.
Example: A chart showing manuscript drafting from week 1–3, peer review preparation week 4, and final submission week 5.
Practical application: Facilitates communication among authors, editors, and sponsors.
Challenges: Updating the chart when timelines shift and ensuring all stakeholders have access.

Impact Factor – A metric reflecting the average number of citations to articles published in a journal over a two-year period.
Related terms: journal ranking, citation index.
Explanation: Calculated by dividing citations in year X to items published in years X-1 and X-2 by the total number of citable items in those years. It is often used (controversially) to gauge journal prestige.
Example: An impact factor of 12.5 indicates that, on average, each article received 12.5 citations.
Practical application: Authors may target high-impact journals for greater visibility.
Challenges: Over-reliance on the metric can encourage citation manipulation and overlook niche journals.

Informed Consent – A process by which participants voluntarily agree to partake in a study after receiving comprehensive information about its purpose, procedures, risks, and benefits.
Related terms: patient assent, consent form.
Explanation: Consent documentation must be obtained before enrollment and archived. In manuscripts, a statement confirming consent is mandatory when patient data are presented.
Example: "Written informed consent was obtained from all participants."
Practical application: Ethical requirement for clinical research and case reports involving identifiable information.
Challenges: Ensuring comprehension in vulnerable populations and handling retrospective consent.

Indexing – The inclusion of a journal's articles in bibliographic databases (e.g., PubMed, Scopus) that enable discoverability.
Related terms: abstracting, cataloguing.
Explanation: Indexing improves article visibility, citation potential, and academic impact. Criteria often involve peer-review rigor, editorial quality, and ethical standards.
Example: A journal indexed in MEDLINE appears in PubMed searches.
Practical application: Authors cite indexed articles to strengthen literature reviews.
Challenges: Achieving and maintaining indexing status, especially for new or niche journals.

Journal Impact Factor (JIF) – See Impact Factor.
Related terms: journal metric, citation analysis.

Key Message – The central takeaway that authors want readers to retain after reading the article.
Related terms: take-home point, conclusion.
Explanation: In medical journalism, the key message is often highlighted in press releases, abstracts, and lay summaries to facilitate public understanding.
Example: "Early initiation of therapy X reduces mortality in sepsis by 20%."
Practical application: Helps journalists craft headlines and health-policy briefs.
Challenges: Distilling complex findings without oversimplifying or misrepresenting data.

Keyword – Specific terms selected by authors to represent the core topics of an article, aiding indexing and search retrieval.
Related terms: subject headings, MeSH terms.
Explanation: Effective keywords reflect terminology used by the target audience and align with database indexing vocabularies.
Example: For a study on hypertension, keywords might include "blood pressure," "angiotensin-converting enzyme inhibitors," and "randomized controlled trial."
Practical application: Authors enter keywords during manuscript submission; editors may suggest modifications.
Challenges: Avoiding overly broad or redundant terms and ensuring consistency with controlled vocabularies.

Lay Summary – A plain-language overview of a research article intended for non-specialist readers.
Related terms: patient-friendly summary, plain language abstract.

Explanation: Lay summaries translate technical jargon into accessible language, often limited to 150–250 words, and may be required by funding agencies or journals.
Example: “A new drug lowered blood pressure in older adults without causing side effects.”
Practical application: Used in press releases, institutional websites, and community outreach.
Challenges: Maintaining scientific accuracy while simplifying concepts; avoiding unintended hype.

Manuscript – The complete written document submitted for publication, including title page, abstract, main text, tables, figures, references, and supplementary material.
Related terms: paper, article, submission.
Explanation: Manuscripts follow journal-specific formatting guidelines and undergo peer review before acceptance. They may be revised multiple times based on reviewer feedback.
Practical application: Authors track version history and maintain a clean, track-changed copy for each revision.
Challenges: Coordinating contributions from multiple authors and adhering to strict word limits.

Medical Subject Headings (MeSH) – A controlled vocabulary used by the National Library of Medicine to index articles in PubMed.
Related terms: thesaurus, indexing terms.
Explanation: MeSH terms are hierarchical, allowing precise retrieval of literature. Authors should select appropriate MeSH terms during submission to improve discoverability.
Example: “Myocardial Infarction” is the MeSH term for heart attack.
Practical application: Improves search engine optimization for the article.
Challenges: Choosing the most specific term without over-indexing; staying updated with annual MeSH revisions.

Methodology Section – The portion of a manuscript describing study design, participants, interventions, outcome measures, and statistical analysis.
Related terms: materials and methods, study design.
Explanation: Clarity and reproducibility are paramount; sufficient detail enables other researchers to replicate the work.
Example: “A double-blind, placebo-controlled trial was conducted with 200 participants randomized 1:1.”
Practical application: Reviewers scrutinize this section for methodological rigor.
Challenges: Balancing detail with journal word limits and avoiding proprietary information that cannot be disclosed.

Open Access (OA) – A publishing model that makes research articles freely available to read, download, and reuse without subscription barriers.
Related terms: gold OA, green OA, article processing charge (APC).
Explanation: OA increases visibility and citation rates; funding agencies often require OA compliance. Gold OA involves immediate free access upon publication, usually with an APC; green OA deposits a manuscript in a repository after an embargo period.
Practical application: Authors select OA options during submission and may need to budget for APCs.
Challenges: Navigating publisher policies, dealing with predatory journals, and ensuring proper licensing

(e.g., CC-BY).

ORCID iD – A unique, persistent digital identifier for researchers, facilitating accurate attribution of scholarly work.
Related terms: author identifier, researcher profile.
Explanation: ORCID links publications, grants, and affiliations to a single profile, reducing name ambiguity. Many journals require ORCID during manuscript submission.
Example: 0000-0002-1825-0097.
Practical application: Enhances discoverability and simplifies citation tracking.
Challenges: Encouraging adoption among all co-authors and maintaining up-to-date records.

Peer Review – The evaluation of a manuscript by independent experts to assess its scientific merit, validity, and relevance before publication.
Related terms: referee, reviewer, editorial assessment.
Explanation: Reviewers provide comments on strengths, weaknesses, and suggestions for improvement. The process can be single-blind, double-blind, or open.
Practical application: Authors respond to reviewer comments in a structured "response to reviewers" document.
Challenges: Reviewer fatigue, bias, and delays; ensuring constructive feedback.

Plagiarism Checker – Software that scans a manuscript for overlapping text with previously published sources.
Related terms: similarity index, Turnitin, iThenticate.
Explanation: Detects unintentional duplication and potential misconduct. Journals often require a similarity report before acceptance.
Practical application: Authors run a pre-submission check to correct inadvertent overlap.
Challenges: Differentiating legitimate quotations from excessive copying and handling false positives.

Press Release – A concise, news-style announcement distributed to media outlets to highlight a newly published study.
Related terms: media kit, communication brief.
Explanation: Press releases translate scientific findings into headline-worthy statements, often including quotes from authors and contextual relevance.
Example: "New trial shows 30% reduction in stroke risk with medication Y."
Practical application: Institutional communication offices draft press releases; authors may review for accuracy.
Challenges: Avoiding sensationalism, ensuring balanced representation of limitations, and complying with embargo policies.

Protocol Deviation – Any departure from the approved study protocol that may affect participant safety or data integrity.
Related terms: non-compliance, amendment.
Explanation: Deviations must be documented, assessed for impact, and reported in the manuscript's methods or results section.

Example: “Three participants received a lower dose due to adverse events, constituting a protocol deviation.”
Practical application: Regulatory bodies may require deviation reports; authors must disclose them transparently.
Challenges: Determining whether a deviation is minor or major and its effect on statistical analysis.

PubMed Central (PMC) – A free full-text archive of biomedical and life-science journal literature operated by the National Institutes of Health.
Related terms: NIHMS, repository.
Explanation: Articles deposited in PMC become publicly accessible, supporting OA mandates. Journals may submit XML files for automated archiving.
Practical application: Authors may be required to deposit their final manuscript in PMC after publication.
Challenges: Conforming to technical formatting requirements and managing embargo periods.

Qualified Clinical Data – Data that meet regulatory standards for use in drug approval, labeling, and safety monitoring.
Related terms: clinical evidence, pivotal data.
Explanation: Such data are generated from well-designed trials, adhere to Good Clinical Practice (GCP), and are subjected to rigorous statistical analysis.
Practical application: Used in regulatory dossiers, health-technology assessments, and guideline development.
Challenges: Ensuring data completeness, handling missing data, and maintaining audit trails.

Randomized Controlled Trial (RCT) – An experimental study design in which participants are randomly assigned to intervention or control groups to assess efficacy.
Related terms: parallel design, crossover trial.
Explanation: Randomization minimizes selection bias, and control groups provide a comparator. Blinding further reduces performance and detection bias.
Practical application: The gold standard for therapeutic efficacy evidence.
Challenges: Recruiting sufficient participants, maintaining allocation concealment, and reporting adherence.

Reference Management Software – Digital tools that help authors collect, organize, and format citations (e.g., EndNote, Zotero, Mendeley).
Related terms: bibliography manager, citation manager.
Explanation: These programs store reference metadata, generate reference lists in various styles, and integrate with word processors.
Practical application: Streamlines manuscript preparation and reduces formatting errors.
Challenges: Synchronizing libraries across collaborators and handling corrupted database files.

Research Ethics Board (REB) – An independent committee that reviews research proposals to ensure ethical standards are met.
Related terms: IRB, ethics committee.
Explanation: REBs assess risk-benefit ratios, consent processes, and participant protections. Their approval is a prerequisite for human-subjects research.

Practical application: Researchers submit protocols, consent forms, and recruitment materials for review.
Challenges: Coordinating multi-site REB approvals and addressing divergent local requirements.

Retraction – The formal withdrawal of a published article due to errors, misconduct, or unreliable findings.
Related terms: withdrawal, correction.
Explanation: Retractions are indexed and linked to the original article to maintain the integrity of the scholarly record.
Practical application: Authors may issue a retraction notice with an explanation; journals update the article status.
Challenges: Managing reputational impact, ensuring databases reflect the retraction, and preventing citation of invalidated work.

Scientific Writing Style – A clear, concise, and objective approach to presenting research, adhering to conventions such as active voice, past tense for methods, and present tense for established facts.
Related terms: technical writing, academic prose.
Explanation: Consistency in terminology, abbreviation usage, and unit presentation enhances readability.
Practical application: Style guides (e.g., AMA Manual of Style) provide detailed rules for punctuation, abbreviations, and numbers.
Challenges: Balancing technical precision with accessibility for interdisciplinary audiences.

Statistical Significance – The probability that an observed effect is not due to random chance, commonly expressed as a p-value p-value, confidence interval, effect size.
Explanation: Statistical significance does not imply clinical importance; authors should also report effect sizes and confidence intervals.
Practical application: Results sections present p-values alongside descriptive statistics.
Challenges: Misinterpretation by non-statistical audiences and overreliance on arbitrary thresholds.

Supplementary Material – Additional files (e.g., datasets, extended methods, multimedia) that support the main article but are not included in the printed version.
Related terms: appendix, online content.
Explanation: Supplementary files are often hosted on the journal's website and receive a DOI. They provide depth without exceeding article length limits.
Practical application: Authors upload files during submission; reviewers assess them for relevance.
Challenges: Ensuring long-term accessibility and proper citation of supplementary items.

Systematic Review – A structured, comprehensive synthesis of all relevant studies on a specific research question, following predefined protocols.
Related terms: meta-analysis, literature review.
Explanation: Systematic reviews employ explicit search strategies, inclusion criteria, and quality appraisal tools (e.g., Cochrane risk-of-bias).
Practical application: They inform clinical guidelines and health-policy decisions.
Challenges: Managing large volumes of literature, dealing with heterogeneity, and updating reviews as new evidence emerges.

Target Audience – The specific group of readers for whom a manuscript or communication is intended (e.g., clinicians, researchers, policymakers, patients).
Related terms: readership, stakeholder.
Explanation: Identifying the target audience shapes language, depth of detail, and emphasis on practical implications.
Practical application: A lay summary targets the general public, while a technical manuscript targets specialists.
Challenges: Balancing technical depth with clarity when the audience includes both experts and non-experts.

Thesaurus – A controlled vocabulary used for indexing and searching, such as MeSH or EMTREE.
Related terms: controlled vocabulary, indexing term.
Explanation: Thesauri enable consistent tagging of articles, facilitating precise retrieval across databases.
Practical application: Authors select appropriate terms during manuscript submission to improve discoverability.
Challenges: Mapping author-generated keywords to standardized terms and staying current with updates.

Transparent Reporting – The practice of fully disclosing study methods, data, and analysis to enable reproducibility and critical appraisal.
Related terms: open science, reporting standards.
Explanation: Initiatives such as CONSORT, STROBE, and PRISMA promote transparency. Authors should also disclose funding sources and conflicts of interest.
Practical application: Detailed methods sections, data availability statements, and registration numbers embody transparency.
Challenges: Balancing comprehensive reporting with journal word limits and protecting confidential information.

Trial Registration Number (TRN) – A unique identifier assigned to a clinical trial upon registration (e.g., NCT01234567).
Related terms: identifier, registry ID.
Explanation: The TRN is cited in the manuscript's abstract and methods to link the published results to the pre-specified protocol.
Practical application: Facilitates tracking of trial outcomes and detection of selective reporting.
Challenges: Updating the registry with amendments and ensuring the TRN is correctly formatted.

U.S. Food and Drug Administration (FDA) Guidance – Official documents that provide recommendations on regulatory expectations for drug development and reporting.
Related terms: regulatory guidance, CFR.
Explanation: FDA guidance influences how clinical data are presented, including requirements for safety reporting, labeling, and electronic submissions.
Practical application: Authors align manuscript content with relevant guidance to streamline regulatory review.
Challenges: Interpreting nuanced language and reconciling differing international guidelines.

Veterinary Medicine Terminology – Specialized vocabulary used when reporting studies involving animal subjects, distinct from human medical terminology.
Related terms: zoo-clinical, animal model.
Explanation: Accurate species identification, dosing units (e.g., mg/kg), and ethical considerations (e.g., IACUC approval) are essential.
Practical application: Journals dedicated to veterinary research require adherence to species-specific reporting standards.
Challenges: Translating findings to human relevance and avoiding anthropomorphic language.

Word Limit – The maximum number of words allowed for a manuscript's main text, abstract, or title, as stipulated by the target journal.
Related terms: character count, manuscript size.
Explanation: Exceeding the limit may result in desk rejection; authors often need to edit for conciseness.
Practical application: Use of abbreviations, removal of redundant sentences, and focusing on essential data.
Challenges: Preserving scientific nuance while meeting strict constraints.

XML Submission – The process of providing manuscript content in Extensible Markup Language format for automated processing by publishers.
Related terms: JATS, markup.
Explanation: XML enables structured representation of text, tables, figures, and metadata, facilitating conversion to HTML, PDF, and indexing formats.
Practical application: Required for many OA journals and large publishers.
Challenges: Technical expertise needed to generate compliant XML and handling conversion errors.

Yield – In the context of research, the proportion of participants or data points that meet predefined criteria for analysis.
Related terms: completion rate, attrition.
Explanation: High yield indicates efficient data collection; low yield may signal feasibility issues.
Practical application: Reporting yield in the results section provides insight into study robustness.
Challenges: Accounting for missing data and explaining losses to follow-up.